

CLAIMS

What is claimed is:

1. A prosthesis, comprising:
 - a femoral prosthesis configured to cover a portion of the distal end of a femur, comprising:
 - a saddle-shaped trochlear groove portion comprising:
 - a central convexly-shaped groove extended toward a distal end of the femoral prosthesis;
 - a convexly-shaped medial portion extending upwardly away from a first side of the central groove; and
 - a convexly-shaped lateral portion extending upwardly away from a second side of the central groove; and
 - an intercondylar notch portion intersecting the trochlear groove portion, comprising
 - a first wing extending distally and curving posteriorly from the distal end of the medial portion; and
 - a second wing extending distally and curving posteriorly from the distal end of the lateral portion and curving away from the first wing; and
 - a patellar prosthesis configured to cover a posterior portion of a patella, comprising a first surface configured to be attached to a patella, and a second surface configured to cooperate with the trochlear groove and intercondylar notch portions of the femoral prosthesis to facilitate sliding engagement between the femoral prosthesis and the patella prosthesis.

2. The prosthesis of claim 1 wherein the patellar prosthesis is formed of a different material than the femoral prosthesis.
3. The prosthesis of claim 1 wherein the first and second wings each have a length that is at least approximately one quarter the length of the trochlear groove portion.
4. The prosthesis of claim 1 wherein the first and second wings are tapered so that adjacent the trochlear groove portion the wings have a width that is greater than terminal ends of the wings.
5. The prosthesis of claim 1 wherein the first and second wings form a generally arch-shaped surface.
6. A femoral prosthesis configured to cooperate with a patellar prosthesis, comprising:
 - a first portion configured to cover a portion of the length of the trochlear groove on the distal end of a femur;
 - a second portion connected to a distal end of the first portion configured to cover a portion of the intercondylar notch on the distal end of the femur;wherein the second portion comprises first and second wings that flare outwardly from the distal end of the first portion, wherein the first wing extends transverse the first portion laterally and posteriorly of the first portion, and the second wing extends transverse the first portion medially and posteriorly of the first portion.

7. The prosthesis of claim 6 wherein the first portion comprises a convex posterior surface configured to cooperate with the trochlear groove of the knee and a concave anterior surface configured to cooperate with a convex surface of the patellar prosthesis.
8. The prosthesis of claim 6 wherein the first portion tapers inwardly from a medial and lateral direction to form a narrow waist adjacent the intersection of the first and second portions.
9. The prosthesis of claim 6 wherein the first wing tapers so that a distal end of the first wing remote from the first portion is narrower than the width of the first wing adjacent the first portion.
10. The prosthesis of claim 9 wherein the second wing tapers so that a distal end of the second wing remote from the first portion is narrower than the width of the second wing adjacent the first portion.
11. The prosthesis of claim 6 wherein a lateral edge of the first wing is configured to terminate on a lateral surface of the intercondylar notch so that the first wing does not substantially extend onto a distal surface of a lateral condyle of the femur.
12. The prosthesis of claim 6 wherein a medial edge of the first wing is configured to terminate on a medial surface of the intercondylar notch so that the first wing does not substantially extend onto a distal surface of a medial condyle of the femur.

13. The prosthesis of claim 6 wherein the first and second wings each form a generally triangular-shaped profile so that the wings are configured to terminate within the intercondylar notch of the femur.
14. A knee prosthesis for covering a portion of a patient's patella, and trochlear groove and intercondylar notch of the femur, comprising:
 - a patellar prosthesis configured to cover a posterior surface of a patella;
 - and
 - a femoral prosthesis comprising:
 - a body having a posterior surface configured to cover a portion of the trochlear groove and an anterior surface forming a groove that is cooperable with the posterior surface of the patellar prosthesis;
 - a medial extension projecting away from a distal end of the body configured to extend along a medial edge of the intercondylar notch; and
 - a lateral extension projecting away from a distal end of the body configured to extend along a lateral edge of the intercondylar notch.
15. The knee prosthesis of claim 14 wherein the medial and lateral extensions intersect the body to form a generally U-shaped configuration.
16. The knee prosthesis of claim 14 wherein the medial and lateral extensions form opposing sides of a bearing surface configured to cooperate with the patellar prosthesis.

17. The knee prosthesis of claim 14 wherein the medial extension has a length and a width and the length is substantially greater than the width.
18. The knee prosthesis of claim 17 wherein the lateral extension has a length and a width and the length is substantially greater than the width.
19. The knee prosthesis of claim 14 wherein the medial extension has an inner edge opposing the lateral extension and an outer edge, wherein the outer edge is configured to terminate over the intercondylar notch without extending over an articular surface of the medial condyle.
20. The knee prosthesis of claim 14 wherein the medial extension has an inner edge opposing the lateral extension and an outer edge, wherein the outer edge comprises a generally convexly-shaped curve.
21. The knee prosthesis of claim 14 wherein the lateral extension has an inner edge opposing the medial extension and an outer edge, wherein the outer edge is configured to terminate over the intercondylar notch without extending over an articular surface of the lateral condyle.
22. The knee prosthesis of claim 14 wherein the lateral extension has an inner edge opposing the medial extension and an outer edge, wherein the outer edge comprises a generally convexly-shaped curve.
23. The knee prosthesis of claim 14 comprising a separate medial condyle prosthesis configured to cover an articular surface of a medial condyle,

wherein the medial condyle prosthesis has an inner edge configured to cooperate with an outer edge of the medial extension.

24. The knee prosthesis of claim 14 comprising a separate lateral condyle prosthesis configured to cover an articular surface of a lateral condyle, wherein the lateral condyle prosthesis has an inner edge configured to cooperate with an outer edge of the lateral extension.
25. The knee prosthesis of claim 14 wherein the body, medial extension and lateral extension are a unitary element.
26. A method for implanting a femoral prosthesis, comprising the steps of:
resecting a portion of a trochlear groove of a patient's femur;
resecting a portion of an intercondylar notch of a patient's femur along a medial portion of the intercondylar notch, wherein the step of resecting along the medial portion terminates without resecting a portion of a medial condyle articular surface;
implanting a femoral prosthesis over the portions of the trochlear groove and the intercondylar notch from which a portion was resected wherein the prosthesis is positioned so as to cover the intercondylar notch without covering the medial condyle articular surface.
27. The method of claim 26 comprising the steps of;
resecting lateral portion of the intercondylar notch and a portion of a lateral condyle articular surface; and

implanting a lateral condylar prosthesis over the portion of the lateral condyle from which the articular surface was resected.

28. The method of claim 27 wherein the lateral condylar prosthesis is separate from the femoral prosthesis, and the method includes implanting the femoral prosthesis and the lateral condylar prosthesis without overlapping the two prostheses.
29. The method of claim 26 wherein the femoral prosthesis comprises a plurality of separate components and the step of implanting the femoral prosthesis comprises implanting a trochlear groove element over the trochlear groove and implanting an intercondylar notch element over the intercondylar notch.
30. The method of claim 26 comprising the step of resecting a portion of an anterior surface of a patella and implanting a patellar prosthesis over the posterior surface, wherein the patellar prosthesis comprises a posterior surface configured to slidably engage the femoral prosthesis.
31. The method of claim 30 wherein the femoral component comprises a concave surface configured to cooperate with the patellar prosthesis.
32. The method of claim 26 wherein the step of resecting a portion of the intercondylar notch comprises resecting along a majority of the length of the distal portion of the medial and lateral condyles.

33. The method of claim 26 wherein the femoral prosthesis comprises an central portion having an elongated channel, and opposing medial and lateral extensions extending transverse the central portion, wherein the channel is configured to cooperate with a patellar prosthesis, and wherein the steps of resecting a portion of the trochlear groove and resecting a portion of the intercondylar notch comprise resecting a portion of the femur sufficient to receive the femoral prosthesis.
34. The method of claim 33 wherein each of the medial and lateral extensions have a width that is narrower than the width of the central portion.
35. A method for implanting a femoral prosthesis, comprising the steps of:
resecting a portion of a trochlear groove of a patient's femur;
resecting a portion of an intercondylar notch of a patient's femur along a lateral portion of the intercondylar notch, wherein the step of resecting along the lateral portion terminates without resecting a portion of articular surface of a lateral condyle;
implanting a femoral prosthesis over the portions of the trochlear groove and the intercondylar notch from which a portion was resected wherein the prosthesis is positioned so as to cover the intercondylar notch without covering the lateral condyle articular surface.
36. The method of claim 35 comprising the steps of;
resecting a portion of a medial condyle articular surface; and

implanting a medial condylar prosthesis over the portion of the medial condyle from which the articular surface was resected.

37. The method of claim 36 wherein the medial condylar prosthesis is separate from the femoral prosthesis, and the method includes implanting the femoral prosthesis and the medial condylar prosthesis without overlapping the two prostheses.
38. The method of claim 35 wherein the femoral prosthesis comprises a plurality of separate components and the step of implanting the femoral prosthesis comprises implanting a trochlear groove element over the trochlear groove and implanting an intercondylar notch element over the intercondylar notch.
39. The method of claim 35 comprising the step of resecting a portion of an anterior surface of a patella and implanting a patellar prosthesis over the posterior surface, wherein the patellar prosthesis comprises a posterior surface configured to slidingly engage the femoral prosthesis.
40. The method of claim 39 wherein the femoral component comprises a concave surface configured to cooperate with the patellar prosthesis.
41. The method of claim 34 wherein the step of resecting a portion of the intercondylar notch comprises resecting along a majority of the length of the distal portion of the lateral condyle.

42. The method of claim 34 wherein the femoral prosthesis comprises an central portion having an elongated channel, and opposing medial and lateral extensions extending transverse the central portion, wherein the channel is configured to cooperate with a patellar prosthesis, and wherein the steps of resecting a portion of the trochlear groove and resecting a portion of the intercondylar notch comprise resecting a portion of the femur sufficient to receive the femoral prosthesis.
43. The method of claim 42 wherein each of the medial and lateral extensions have a width that is narrower than the width of the central portion.
44. A method for implanting a femoral prosthesis on a knee having a medial and lateral condyle, a trochlear groove and an intercondylar notch between the medial and lateral condyles, comprising the steps of:
providing a femoral prosthesis comprising a central portion having an elongated channel, and medial and lateral extensions extending away from a distal end of the central portion, wherein the medial and lateral extensions each have a width that is narrower than the central portion;
resecting a portion of the trochlear groove and intercondylar groove, wherein the resecting provides a recessed portion of the femur configured to receive the femoral prosthesis;
locating the femoral prosthesis over the recessed portion without covering an articular surface of either the medial or lateral condyle;
and
attaching the femoral prosthesis to the femur.

45. The method of claim 44 comprising the steps of resecting an posterior portion of the patella and attaching a patellar prosthesis to the posterior portion of the patella, wherein the patellar prosthesis is configured to cooperate with the channel and medial and lateral extensions of the femoral prosthesis.
46. The method of claim 44 wherein the combined width of the medial and lateral extensions is less than the width of the central portion.
47. The method of claim 44 wherein the step of attaching comprises cementing the femoral prosthesis to the femur.
48. The method of claim 44 wherein the femoral prosthesis provides a generally L-shaped bearing surface cooperable with a patellar prosthesis, wherein the bearing surface extends generally vertically along the anterior surface of the femur and angles inwardly at a distal end toward a posterior surface of the condyles.
49. The method of claim 44 wherein the medial and lateral extensions flare outwardly away from the central portion and away from each other.